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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,947	04/10/2001	Junji Yamada	205650US3	6993

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EXAMINER

MITCHELL, JAMES M

ART UNIT PAPER NUMBER

2827

DATE MAILED: 07/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/828,947

Applicant(s)

YAMADA, JUNJI

Examiner

James Mitchell

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to the amendment filed May 16, 2002.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masumoto et al. (U.S 5,646,445) in view of applicant's admitted prior art and Kauo et al. (U.S 5,263,115).

5. Masumoto (Fig. 29) discloses a power semiconductor module with a connection structure that has an electrode terminal (1,2) including a first end connected with a power semiconductor device (E2), which is resin sealed (41) inside a case (11), a second end of said terminal exposed along the outer surface of the case with an

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embedded nut (31) with a female screw hole (Line 18, Column 2) provided on a side of outer surface of the case, and a male screw member ("bolt", Lines 19-20, Column 2) having screw threads wherein an end is threadedly engaged with the female screw hole, and a portion of the male screw extends through the electrode terminal.

6. Masumoto does not disclose the terminal as being electrically connected to an electrode for external connection, or the male screw having a second threaded end wherein the second end is configured to receive a removable fastening member.

7. However, applicant's admitted prior art (Fig. 9) utilizes an electrode terminal being connected to an electrode for external connection ("electrode plate", 97) that is secured by a nut (85) fixed to a middle portion of the screw member.

8. It would have been obvious to one of ordinary skill in the art to incorporate with the terminal of Matsumoto an additional electrode wherein the screw member is engaged with the female screw hole through a plurality of electrode terminals, in order to form an external connection as admitted by applicant (Lines 18-19, Page 2).

9. Kauo utilizes a male screw member having a second threaded end wherein the second end is configured to receive a removable fastening member (17).

10. It would have been obvious to one of ordinary skill in the art to modify the male screw member of Masumoto by having a second threaded end wherein the second end is configured to receive a removable fastening member, such that the screw is headless in order to firmly join the case and terminal together and provide a means for easily changing the components if damaged as taught by Kauo (Column 2, Lines 15-16)

11. In regards to claim 4, it would have been an obvious matter of design choice to change the size of the screw member such that it opposite ends have different diameters, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), *Gardner v. Tec*, 220 USPQ 777 (Fed Cir. 1984).

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, APA and Kauo as applied to claim 1 and further in view of Takegawa (JP 09-55462).

13. Neither Matsumoto, APA or Kauo show the terminal with a female screw hole formed therein, however Takegawa utilizes a female screw hole within a terminal.

14. It would have been obvious to one of ordinary skill in the art to modify the combined terminal structure of Matsumoto and APA by incorporating a female screw hole within the terminal in order to lessen the manufacturing cost of the semiconductor by dispensing with the fixing nut as taught by Takegawa (Abstract Solved, Lines 1-3).

15. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, APA and Kauo as applied to claim 1 and further in view of Abe (U.S. 4,018,132).

16. The prior art does not show the threads of a screw or bolt at opposite ends having threads of opposite direction or with a middle portion having no screw thread.

17. However, Abe (Fig. 3) utilizes a screw or bolt at opposite ends having threads of opposite direction and a middle portion having no screw thread.

18. It would have been obvious to one of ordinary skill in the art to form the bolt of Masumoto with of a screw or bolt having threads of opposite direction at opposite ends and with a middle portion having no screw thread, in order to increase the mechanical strength of the bolt as taught by Abe (Lines 30-31, Column 1).

***Response to Arguments***

19. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

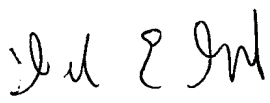
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
jmm  
July 23, 2002

  
DAVID E. GRAYBILL  
PRIMARY EXAMINER